

C2 2. (Twice Amended) The process according to claim 1 comprising culturing the microorganism in a culture medium for culturing a microorganism in which the concentrations of phosphate ions in the culture medium are in the range of 5 to 60 mM.

3. (Twice Amended) The process according to claim 2 comprising culturing the microorganism in a culture medium for culturing a microorganism in which the concentrations of phosphate ions in the culture medium are in the range of 10 to 45 mM.

C3 7. (Amended) The process according to claim 6 wherein said unsaturated fatty acid is selected from the group consisting of  $\gamma$ -linolenic acid, dihomo- $\gamma$ -linolenic acid, arachidonic acid, eicosapentaenoic acid, 5,8,11-eicosatrienoic acid, 6,9-octadecadienoic acid, and 8,11-eicosadienoic acid.

11. (Twice Amended) The process for production according to claim 8 wherein said ions are provided by a combination of potassium dihydrogen phosphate, anhydrous sodium sulfate, magnesium chloride hexahydrate and calcium chloride dihydrate.

C4 12. (Twice Amended) The process for production according to claim 8 wherein said unsaturated fatty acids are arachidonic acid,  $\gamma$ -linolenic acid, dihomo- $\gamma$ -linolenic acid, 5,8,11-eicosatrienoic acid and/or eicosapentaenoic acid.

C5 18. (Twice Amended) The process for production according to claim 17 wherein the processing of said defatted soybeans, or non-defatted soy beans is by heat treatment; acid treatment; alkali treatment; enzyme treatment; chemical modification; denaturation, renaturation or combination thereof, by chemical processing, physical processing, or combination thereof; removal of a portion of the components with water, organic solvents, or combination thereof; removal of a portion of the components by filtration, centrifugation or combination thereof; freezing; crushing; drying; sifting, or combinations thereof.

No 21. (Twice Amended) A culture medium for culturing a microorganism belonging to the subgenus *Mortierella* comprising phosphate ions, potassium ions, sodium ions, magnesium ions, and calcium ions in concentrations in the range of 5 to 60 mM, 5 to 60 mM, 2 to 50 mM, 0.5 to 9 mM, and 0.5 to 12 mM, respectively, and wherein said culture medium comprises a nitrogen source and a carbon source.

C6 22. (Twice Amended) A culture medium for culturing a microorganism belonging to the subgenus *Mortierella* comprising phosphate ions, potassium ions, sodium ions, magnesium ions, and calcium ions in concentrations in the range of 10 to 45 mM, 10 to 45 mM, 5 to 40 mM, 1 to 6 mM, and 1 to 9 mM, respectively, and wherein said culture medium comprises a nitrogen source and a carbon source.

C8 28. (Amended) The process for production according to claim 9 wherein said phosphate ions are provided by at least one salt selected from the group consisting of

dipotassium hydrogen phosphate, potassium dihydrogen phosphate, disodium hydrogen phosphate and sodium dihydrogen phosphate; said potassium ions are provided by at least one salt selected from the group consisting of dipotassium hydrogen phosphate, potassium dihydrogen phosphate and potassium chloride; said sodium ions are provided by at least one salt selected from the group consisting of disodium hydrogen phosphate, sodium dihydrogen phosphate, sodium chloride and sodium sulfate; said magnesium ions are provided by magnesium chloride and/or magnesium sulfate; and said calcium ions are provided by calcium chloride and/or calcium carbonate.

C8  
cont  
29. (Amended) The process for production according to claim 9, wherein said ions are provided by a combination of potassium dihydrogen phosphate, anhydrous sodium sulfate, magnesium chloride hexahydrate and calcium chloride dihydrate.

30. (Amended) The process for production according to claim 9, wherein said unsaturated fatty acids are arachidonic acid,  $\gamma$ -linolenic acid, dihomo- $\gamma$ -linolenic acid, 5,8,11-eicosatrienoic acid and/or eicosapentaenoic acid.

C9  
33. (Amended) The process for production according to claim 32, wherein the nitrogen source derived from soy beans has a nitrogen content of at least 2% wt with respect to the total components except for water.

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35. (Amended) The process for production according to claim 34, wherein the processing of said defatted soy beans, or non-defatted soy beans, is by heat treatment; acid treatment; alkali treatment; enzyme treatment; chemical modification; denaturation, renaturation or combination thereof, by chemical processing, physical processing or combination thereof; removal of a portion of the components with water, organic solvents, or combinations thereof; removal of a portion of the components by filtration, centrifugation, or combinations thereof; freezing; crushing; drying; sifting, or combinations thereof.

Please add the following new claims 39-42:

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39. A process for culturing a microorganism belonging to the subgenus *Mortierella*, wherein the proportion of the mycelia in the pellet form is increased by increasing the concentrations of sodium ions, magnesium ions, and/or calcium ions in the culture medium and thereby the productivity of an unsaturated fatty acid by the microorganism is enhanced.

40. The process according to claim 1 comprising culturing the microorganism in a culture medium for culturing a microorganism in which the concentrations of sodium ions, magnesium ions, and calcium ions in the culture medium are in the range of 2 to 50 mM, 0.5 to 9 mM, and 0.5 to 12 mM, respectively.